

FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST-9259

FACILITY NAME: Columbia Ethanol Plant Holdings, LLC

SUMMARY

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SUMMARY

PURPOSE of this Fact Sheet

This fact sheet explains and documents the decisions Ecology made in drafting the proposed State Waste Discharge permit ST-9259 for Columbia Ethanol Holdings, LLC that will allow the discharge of wastewater to waters of the State of Washington.

State law requires any industrial facility to obtain a permit before discharging waste or chemicals to waters of the state which includes groundwater.

A State Waste Discharge permit limits the types and amounts of pollution the facility may discharge. Ecology bases those limits either on (1) the pollution control or wastewater treatment technology available to the industry, or on (2) the effects of the pollutants on the groundwater.

PUBLIC ROLE in the Permit

Ecology makes the draft permit and fact sheet available for public review and comment at least thirty (30) days before it issues the final permit to the facility operator. Copies of the fact sheet and draft permit for Columbia Ethanol Holdings, LLC, State Waste Discharge permit ST-9259, are available for public review and comment from February 6, 2009 until the close of business March 9, 2009. For more details on preparing and filing comments about these documents, please see **Appendix A - Public Involvement**.

Columbia Ethanol Holdings, LLC, reviewed the draft State Waste Discharge permit and fact sheet for factual accuracy. Ecology corrected any errors or omissions about the facility's location, product type or production rate, discharges or receiving water, or its history.

After the public comment period closes, Ecology will summarize substantive comments and our responses to them. Ecology will include our summary and responses to comments to this Fact Sheet as **Appendix D - Response to Comments**, and publish it when we issue the final State Waste Discharge permit. Ecology will not revise the rest of the fact sheet, but the full document including all appendices will become part of the legal history contained in the facility's permit file.

I. INTRODUCTION

The legislature defined Ecology's authority and obligations for the wastewater discharge permit program in the Water Pollution Control law, Chapter 90.48 RCW (Revised Code of Washington).

Ecology adopted rules describing how it exercises its authority:

- State Waste Discharge Program (Chapter 173-216 WAC)
- Water Quality Standards For Ground Waters Of The State Of Washington (Chapter 173-200 WAC)
- Submission of Plans and Reports for Construction of Wastewater Facilities (Chapter 173-240 WAC)

These rules require any industrial facility operator to obtain a State Waste Discharge permit before discharging wastewater to state waters. They also help define the basis for limits on each discharge and for performance requirements imposed by the permit.

Under the State Waste Discharge permit program and in response to a complete and accepted permit application Ecology must prepare a draft permit and accompanying fact sheet, and make them available for public review before final issuance. Ecology must also publish an announcement (public notice) telling people where they can read the draft permit, and where to send their comments, during a period of thirty days. (See **Appendix A - Public Involvement** for more detail about the Public Notice and Comment procedures). After the Public Comment Period ends, Ecology may make changes to the draft State Waste Discharge permit in response to comment. Ecology will summarize the responses to comments and any changes to the permit in **Appendix D**.

Table 1 - General Facility Information

GENERAL INFORMATION	
Applicant	Columbia Ethanol Plant Holdings, LLC
Facility Name and Address	Columbia Ethanol Plant Holdings, LLC 231610 East Game Farm Road Kennewick, WA 99337
Type of Facility	Ethanol Plant
Type of Treatment:	Iron absorption followed by sand filters
Facility Location	231610 East Game Farm Road, Kennewick, WA 99337 Latitude: 46°09'28" N Longitude: 119° 00'48" W
Legal Description of Application Area	Parts of Sections 23, 24, 25, and 26, Township 8, Range 8 Latitude: 46°09' 21" N Longitude: 119° 00' 51" W
Contact at Facility	Name: Brian Brendel, President Telephone #: 509-946-7111
Responsible Official	Name: Brian Brendel Title: President Address: 1806 Terminal Drive, Richland, WA 99354 Telephone #: 509-946-7111 FAX #: 509-946-9365

II. BACKGROUND INFORMATION

A. FACILITY DESCRIPTION

INDUSTRIAL PROCESSES

The facility will produce ethanol by fermentation of grain to be use as an additive to gasoline. The facility will utilize grain as the feedstock, and at full production, approximately 54 million bushels of corn will be required on an annual basis to produce approximately 143 million gallons of fuel ethanol. Ethanol will be marketed for use as a gasoline additive as required by federal air pollution regulations and some state regulations. Approximately 180,000 tons of dry distiller's grain will be produced per year as a beneficial by product. The dry distiller grain will be marketed as a livestock feed. Carbon dioxide another by product of ethanol production may be captured and sold.

LOCATION OF FACILITY

The proposed ethanol facility will be located on approximately 150 acres in the city of Finley in Benton County, Washington. The proposed plant is located in Section 23, 24, 25, and 26, Township 8, Range 30. The site is being purchased from Agrium U S, Inc and is known as the Finley site. The proposed site is at an elevation of 350 feet above sea level and adjacent to the Columbia River.

WASTEWATER TREATMENT (PRIOR TO LAND TREATMENT)

The ethanol plant design isolates and consumes all process water. The wastewater generated consists of water generated from back-flush waste from the filtering of the river water, concentrate from the reverse osmosis of river water, concentrated river water from the cooling towers, and the discharge from recharging the water softener.

The facility will receive water from the Columbia River. During maximum cooling requirements, the river water flow will be 1,200 gallons per minute (gpm). Evaporation will lose 610 gpm and processing will use 340 gpm of the river water. The remaining 250 gpm will be wastewater.

The facility will send wastewater through two parallel commercial sand filters and discharged to an infiltration basin. The sand will be screened to a size that maximizes the removal of iron thus removing the arsenic. The sand filters will be operated in parallel. One will be used to filter the wastewater while the other one is being backwashed. The filters are designed to separate the iron-arsenic precipitate from the wastewater. The wastewater contains an iron:arsenic ratio of 40:1 which is above the minimum value of 20:1 set for absorption of arsenic with iron by the Environmental Protection Agency publication (Treatment Technology for Arsenic Removal (EPA/600/S-05/006)). This publication is at <http://www.epa.gov/ORD/NRMRL/pubs/600s05006/600s05006.pdf>. The system is considered by EPA to be best available technology (BAT). EPA's BAT determination is considered to be all known and available reasonable treatment (AKART)

as long as the Permittee optimizes the pH and ensures that the arsenic is in oxidation state V.

Publication EPA/600/S-05/006 states that the optimal pH for co-precipitation of arsenic with iron is 7.0 SU and that pH range 7-8 SU is acceptable. The pH of the influent to the sand filters is 6.8 SU. With the iron level in the influent wastewater, the arsenic is expected to be in the As (V) oxidation state. The proposed permit will be conditioned so the Permittee will monitor the total arsenic before discharging into the infiltration beds. If the sand filtering system does not meet expectations, the Permittee will be required to install a chlorination system and a pH addition system.

General Condition G5 requires the Permittee to submit the plans and specifications prior to constructing the wastewater treatment system.

Since the 2008 permit issuance, the facility planned to increase its ethanol production from 55 million to 143 million gallons per year. This will increase the peak water usage from 475 to 1,200 gpm. The wastewater discharge will also increase to 250 gpm.

LAND TREATMENT AND DISTRIBUTION SYSTEM (INFILTRATION BASIN)

Columbia Ethanol will discharge the treated wastewater to a 0.9-acre (40,500 square feet) infiltration basin. The facility originally proposed for a 2,500 square feet (50 by 50 feet) infiltration basin, but increased the size to 40,500 square feet to handle higher volume of wastewater. The basin sizing is based on a 250 gpm wastewater discharge and an infiltration rate of 0.6 inches per hour. The infiltration rate is based on 10 percent of the saturated hydraulic conductivity of 42 $\mu\text{m}/\text{second}$. According to data from the Natural Resources Conservation Service web soil survey (<http://websoilsurvey.nrcs.usda.gov>), the infiltration basin has a high saturated conductivity range of 100 to 705 $\mu\text{m}/\text{second}$. We consider 42 $\mu\text{m}/\text{second}$ to be a conservative estimate.

GROUND WATER

There are many wells within the vicinity of the Agrium Finley plant site. There is one domestic well within a quarter mile of the proposed gravel dispersion field, however, the domestic well is up-gradient from the dispersion field.

Analyses of the water from the Agrium well showed that the well water contains concentrations of lead, copper, and dissolved solids well above those found in the Columbia River water.

The geologic data and the quality of the water from the Agrium wells as compared to the water quality of the Columbia River suggests that the groundwater generally flows toward the Columbia River from the agricultural land at a slightly higher elevation and to the west of the proposed site.

The groundwater flow direction for the expanded area around the site is shown in **Appendix C - Figure 3**. This figure indicates that the ground water from the Horse Heaven Hills flows toward the Army Corps of Engineers drainage systems with flow

pattern influences from the southerly groundwater inflow from the Columbia River. Accordingly, the ethanol facility wastewater is expected to flow in a general south to southeast direction from the proposed wastewater gravel dispersion field location to the Army Corps of Engineers drain pipe. Pumping Station 15D currently pumps water from the drainage system at a relatively constant rate of 2,200 gpm.

Well driller logs for several of the wells located approximately 0.5 to 1 mile from the proposed site provide additional soils information. The well driller logs show that the soils primarily consist of sands, gravels, and cobbles down to basalt at the approximate depth of 30 feet. The well driller logs also indicated that the depth to groundwater is approximately 15 feet.

B. PERMIT STATUS

This is a new facility. Columbia Ethanol submitted a permit application to Ecology on September 13, 2006. Ecology accepted it as complete on October 11, 2006. The draft permit went through a public notice process to request comments from the public. The Department issued the permit on February 14, 2007.

Columbia Ethanol submitted an application for permit modification on December 4, 2008. Ecology reviewed the application and accepted it as complete on January 2, 2009. The modified permit will go through a 30-day public notice process.

C. WASTEWATER CHARACTERIZATION

The concentration of pollutants in the discharge was reported in the permit application. The proposed wastewater discharge prior to infiltration is characterized for the following parameters:

Table 2: Wastewater Characterization

Chapter 173-200 WAC Groundwater Quality Standards			Estimated Wastewater Value
Contaminants	Limiting Value	Units	
Barium	1.0	mg/L	0.126
Cadmium	0.01	mg/L	0.00076
Chromium	0.05	mg/L	0.002
Lead	0.05	mg/L	0.001
Mercury	0.002	mg/L	0.00050
Selenium	0.01	mg/L	0.0019
Silver	0.05	mg/L	0.0018
Fluoride	4	mg/L	0.419
Nitrate (as N)	10	mg/L	5.8
Copper	1.0	mg/L	0.21
Manganese	0.05	mg/L	0.266
Zinc	5.0	mg/L	0.042
Chloride	250	mg/L	10.8
Total dissolved solids	500	mg/L	413.2

Arsenic	0.05	µg/L	ND(1.0)
pH	6.5 – 8.5	SU	6.8

E. SEPA COMPLIANCE

Regulation exempts reissuance or modification of any wastewater discharge permit from the SEPA process as long as the permit contains conditions are no less stringent than state rules and regulations. The exemption applies only to existing discharges, not to new discharges.

The Columbia Ethanol Plant project completed the SEPA requirements and Ecology issued a mitigated determination of non-significance (MDNS) on October 30, 2006. The proposed permit will go through a public review process to request comments from the public.

On August 8, 2008, the facility submitted a modified SEPA checklist to:

1. Increase the ethanol production capacity from 55 to 143 million gallons per year.
2. Add corn kernel separation and corn oil extraction to the process.
3. Transport ethanol via the Columbia River by barge.

The Department reviewed the modified checklist and found that the MDNS is adequate for the above modifications on October 17, 2008. The Department issued a new MDNS covering the modifications effective November 21, 2008.

III. PROPOSED PERMIT CONDITIONS

State regulations require that Ecology base permit discharge limits on the:

- Technology and treatment methods available to treat specific pollutants (technology-based). Dischargers must treat wastewater using all known, available, reasonable methods of prevention, control, and treatment (AKART).
- Conditions necessary to meet applicable water quality standards to preserve or protect beneficial uses for ground waters.
- Applicable requirements of other local, state and federal laws.

Ecology applies the most stringent of these limits to each parameter of concern and further describes the proposed limits below.

The limits in this permit reflect information received in the application and from supporting reports (engineering, hydrogeology, monitoring, and irrigation/crop management). Ecology evaluated the permit application and determined the limits needed to comply with the rules adopted by the State of Washington. Ecology does not develop effluent limits for all reported pollutants. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, and are not listed in regulation.

Ecology does not usually develop permit limits for pollutants that were not reported in the permit application but that may be present in the discharge. The permit does not

authorize the discharge of the non-reported pollutants. During the five-year permit term, the facility's effluent discharge conditions may change from those conditions reported in the permit application. The facility must notify Ecology if significant changes occur in any constituent. Industries may be in violation of their permit until the permit is modified to reflect additional discharge of pollutants.

Permit writers in some cases must decide if the discharge of a pollutant onto the ground near surface water is subject to an NPDES permit or State Waste discharge permit. Ecology believes the best guidance on this issue comes from the United States District Court Eastern District of Washington (*Washington Wilderness Coalition v. Hecla Mining*, 870 F. Supp 983, 990). The court held that since the goal of the Clean Water Act (CWA) is to protect the quality of surface waters, any pollutant which enters such waters, whether directly or through groundwater, is subject to regulation by NPDES permit. The court went on to hold, "It is not sufficient to allege groundwater pollution, and then to assert a general hydrological connection between all waters. Rather, pollutants must be traced from their source to surface waters, in order to come within the purview of the CWA."

The decision on hydraulic continuity depends upon the pollutant (type and mobility in soils), the pollutant loading, the soils at the site, and the hydrology of the site. Ecology has determined that it should issue a State Waste Discharge Permit and not an NPDES permit for this site because the groundwater flow at the point of discharge is toward the Army Corps of Engineer drainage ditch and not the Columbia River (see **Section II.A – Ground Water**).

A. TECHNOLOGY-BASED EFFLUENT LIMITS

All waste discharge permits issued by Ecology must specify conditions requiring the facility to use AKART before discharging to waters of the state (RCW 90.48).

Ecology approved the engineering report for Columbia Ethanol wastewater facility titled *Finley Ethanol Plant Wastewater System Engineering Report*, dated December 4, 2008, and prepared by Larry Ulbricht, P.E., in conformance with *Guidelines for the Preparation of Engineering Reports for Industrial Wastewater Land Application Systems*, May 1993 (<http://www.ecy.wa.gov/biblio/9336.html>) and *Guidance on Land Treatment of Nutrients in Wastewater, with Emphasis on Nitrogen*, November 1994 (<http://www.ecy.wa.gov/biblio/0410081.html>). Ecology determined the facility meets the minimum requirements demonstrating compliance with the AKART standard if the Columbia Ethanol operates the treatment and disposal system as described in the approved engineering report and any subsequent Ecology approved reports.

B. GROUND WATER QUALITY BASED EFFLUENT LIMITS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's ground waters including the protection of human health, Chapter 173-200-100 WAC states that waste discharge permits shall be conditioned in such a manner as to authorize only activities that will not cause violations of the Ground Water Quality

Standards. The goal of the ground water quality standards is to maintain the highest quality of the State's ground waters and to protect existing and future beneficial uses of the ground water through the reduction or elimination of the discharge of contaminants to ground water [Chapter 173-200-010(4) WAC]. Ecology achieves this goal by:

1. Applying AKART to any discharge.
2. Applying the antidegradation policy of the ground water standards.
3. Establishing numeric and narrative criteria for the protection of human health and the environment in the ground water quality standards.

Applicable ground water criteria as defined in Chapter 173-200 WAC and in RCW 90.48.520 for this discharge are included in column 2 of **Table 1 - Wastewater Characterization**. The Department has reviewed existing records and is unable to determine if ambient ground water quality is either higher or lower than the criteria given in Chapter 173-200 WAC; therefore, the Department will use the criteria expressed in the regulation in the proposed permit. The discharges authorized by this proposed permit are not expected to interfere with beneficial uses. The present best detection limit for arsenic is 0.1 µg/L. Therefore, with the groundwater standard of 0.05 µg/L, it is not possible to determine if the ground water quality is higher or lower than the criteria given in Chapter 173-200 WAC. For all other tested chemicals the ground water quality is above the criteria given in Chapter 173-200 WAC.

Table 2: Groundwater Quality-based Effluent Limits

Parameter	Limitation
Arsenic*	0.05 µg/L total arsenic

*Compliance with the limit shall be shown at non-detect with the present detection limit of 0.5 µg/L total arsenic.

No valid up gradient background data were available for the arsenic. The Permittee is required in section S2 of the proposed permit to collect background concentrations near the point of discharge. This information may result in a permit modification or limits in the next renewal.

The discharge has to potential to create a hydraulic mound at the infiltration basin. The mound may affect the groundwater flow direction in the area. The Department proposes to monitor wells surrounding the infiltration basin for arsenic. The Permittee must also monitor the groundwater levels at the wells to determine groundwater flow direction.

ANTIDEGRADATION

The antidegradation policy within the State of Washington's Ground Water Quality Standards requires that beneficial uses of ground water be preserved. When contaminant concentrations in existing ground water are less than the criteria values, Ecology considers the background concentrations as the water quality criteria. In this situation, discharges to ground water must not degrade the existing water quality. When

contaminant concentrations in the existing ground water are higher than the criteria, Ecology must protect the existing water quality. You can obtain more information on Ecology's implementation of the antidegradation policy by referring to Ecology Publication #96-02 (available at <http://www.ecy.wa.gov/biblio/9602.html>).

BACKGROUND WATER QUALITY

Ecology uses the procedures for estimating background water quality in the *Implementation Guidance for the Ground Water Quality Standards* (Ecology, Revised October 2005).

Ecology defines background water quality as the quality of groundwater which represents conditions without the impacts of the proposed activity. Accordingly, background water quality is described statistically as the 95 percent upper tolerance interval. This means that Ecology is 95% confident that 95% of future measurements will be less than the upper tolerance interval. Applicable ground water criteria as defined in Chapter 173-200 WAC and in RCW 90.48.520 for this discharge is in column 2 of **Table 1**.

Ecology has reviewed existing records for the facility's land treatment site and is unable to determine background ground water quality. The proposed permit includes a monitoring requirement to establish the upgradient (background) quality of the ground water. Until Ecology establishes background water quality, the facility will operate within the approved design parameters and comply with all conditions in the permit.

Section S2 of the permit requires the facility to collect background concentrations near the point of discharge. This information may result in a permit modification or limits in the next renewal.

D. DESIGN CRITERIA

Under Chapter 173-216-110 (4) WAC, neither flows nor waste loadings may exceed approved design criteria. Ecology obtained approved design criteria for this facility's wastewater treatment plant and the infiltration basin from the engineering report dated December 4, 2008 prepared by Columbia Ethanol.

The design criteria for the wastewater discharge is 250 gallons/min.

IV. MONITORING REQUIREMENTS

Ecology requires monitoring, recording, and reporting (Chapter 173-216-110 WAC) to verify that the treatment process functions correctly, the discharge meets ground water criteria and that the discharge complies with the permit's effluent limits.

A. WASTEWATER MONITORING

Ecology details the proposed Ecology details the proposed monitoring schedule under Condition S2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

B. GROUND WATER MONITORING

Ecology requires ground water monitoring at the site in accordance with the Ground Water Quality Standards, Chapter 173-200 WAC. Ecology has determined that this discharge has a potential to pollute the ground water. Therefore the Facility must evaluate the impacts on ground water quality. Ecology considers monitoring of the ground water at the site boundaries and within the site an integral component of such an evaluation.

The Implementation Guidance for the Ground Water Quality Standards states that all monitoring wells must meet the requirements of Chapter 173-160 WAC, Minimum Standards for Construction and Maintenance of Wells. The guidance also identifies that down gradient monitoring wells must be within a ¼ mile radius from the discharge point and that the up gradient wells must be within ½ mile radius from the discharge point. Monitoring well F-30 is an existing monitoring well that is down gradient and within ¼ mile from the proposed ethanol facility discharge, and is the monitoring well that will be used to verify that the ethanol facility does not have an unacceptable or adverse impact on the ground water quality. The Permittee requested a variance for the up gradient monitoring well on the basis that the well will not provide water samples from the top of the uppermost water level. The up gradient monitoring well is a domestic well (D1) within ½ mile of the discharge point that meets all but one of the requirements of Chapter 173-160 WAC; the exception is that the up gradient well extracts water from the uppermost aquifer but not from the top of the aquifer. Because, the up gradient monitoring well is to provide ambient ground water quality data to which the down gradient ground water quality data is compared, water from any depth in the same aquifer is sufficiently representative of the aquifer's ground water quality to verify that degradation of the ground water quality does not occur. The proposed permit allows the company to use the domestic well up gradient from the infiltration bed to monitor the ambient pollutants contained in the groundwater and to use the existing F-30 well as the down gradient monitoring well and D1 as the up gradient well.

The discharge has the potential to form a groundwater mound at the infiltration basin. The mound may alter the south to southeast groundwater flow, possibly creating a radial groundwater flow from the infiltration basin. To determine the discharge's impact on groundwater flow direction, Ecology proposes to add 3 more monitoring wells around the infiltration basin. The wells are D2 and R20 to the south-southwest of the basin, and 1.1 to the east-northeast of the basin. The wells are within 1/3 mile of the discharge point (**Appendix C – Figure 4**).

C. LAB ACCREDITATION

Ecology requires that facilities must use a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories* to prepare all monitoring data (with the exception of certain parameters).

V. OTHER PERMIT CONDITIONS

A. REPORTING AND RECORDKEEPING

Ecology based permit condition S3 on our authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (Chapter 173-216-110 WAC).

B. OPERATIONS AND MAINTENANCE

Ecology requires dischargers to take all reasonable steps to properly operate and maintain their wastewater treatment system in accordance with state regulations (Chapters 173-240-080 and 173-216-110 WAC). The facility must prepare and submit an operation and maintenance manual for the wastewater facility.

Implementation of the procedures in the Operation and Maintenance Manual ensures the facility's compliance with the terms and limits in the permit and ensures the facility provides AKART to the waste stream.

C. SOLID WASTE CONTROL PLAN

The facility could cause pollution of the waters of the state through inappropriate disposal of solid waste or through the release of leachate from solid waste.

This proposed permit requires this facility to develop a solid waste control plan to prevent solid waste from causing pollution of waters of the state. The facility must submit the plan to Ecology for approval (RCW 90.48.080).

D. NON ROUTINE AND UNANTICIPATED DISCHARGES

Occasionally, this facility may generate wastewater not characterized in the permit application because it is not a routine discharge and the facility did not anticipate it at the time of application. These wastes typically consist of waters used to pressure-test storage tanks or fire water systems or of leaks from drinking water systems.

The permit authorizes non-routine and unanticipated discharges under certain conditions. The facility must characterize these waste waters for pollutants and examine the opportunities for reuse. Depending on the nature and extent of pollutants in this wastewater and on any opportunities for reuse, Ecology may:

- Authorize the facility to discharge the water.
- Require the facility to treat the wastewater.
- Require the facility to reuse the wastewater.

E. SPILL PLAN

This facility stores a quantity of chemicals on-site that have the potential to cause water pollution if accidentally released. Ecology can require a facility to develop best

management plans to prevent this accidental release [section 402(a)(1) of the Federal Water Pollution Control Act (FWPCA) and RCW 90.48.080].

The proposed permit requires this facility to develop and implement a plan for preventing the accidental release of pollutants to state waters and for minimizing damages if such a spill occurs.

F. GROUND WATER QUALITY EVALUATION (HYDROGEOLOGIC STUDY)

In accordance with Chapter 173-200-080 WAC, the proposed permit requires the facility to prepare and submit a hydrogeologic study of the land treatment site for Ecology review and approval. The facility must base the hydrogeologic study on soil and hydrogeologic characteristics and assess impacts on the ground water. The study must determine whether or not the discharge is in hydraulic continuity with surface waters. To prepare the study, the facility must use "*Guidelines for Preparation of Engineering Reports for Industrial Wastewater Land Application Systems*," (Ecology 1993) and "*Implementation Guidance for the Ground Water Quality Standards* (Ecology, 2005).

Well driller logs for several of the wells located approximately 0.5 to 1 mile from the proposed site provide additional soils information. The well driller logs show that the soils primarily consist of sands, gravels, and cobbles down to basalt at the approximate depth of 30 feet. Also, the well driller logs indicate that the depth to groundwater is approximately 15 feet. Since the Permittee will meet the ground water standards before discharge, Ecology considers the hydrogeologic characteristics contained in the engineering report sufficient to characterize the hydrogeology in the vicinity of the site. Therefore, no further hydrogeologic study will be required at this time.

G. GENERAL CONDITIONS

Ecology bases the standardized General Conditions on state and federal law and regulations. They are included in all State Waste Discharge permits issued by Ecology.

VI. PERMIT ISSUANCE PROCEDURES

A. PERMIT MODIFICATIONS

Ecology may modify this permit to impose numerical limits, if necessary to comply with water quality standards for ground waters, based on new information from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

Ecology may modify this permit to comply with new or amended state regulations.

B. PROPOSED PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limits and conditions believed necessary to control toxics, and to protect human health and the beneficial uses of waters of the State of Washington. Ecology proposes that the permit be issued for 5 years.

VII. REFERENCES FOR TEXT AND APPENDICES

Gavlak, R., D. Horneck , R.O. Miller, and J. Kotuby-Amacher. Soil, Plant And Water Reference Methods For The Western Region, 2nd edition 2003.

Washington State Department of Ecology, 1993. Guidelines for Preparation of Engineering Reports for Industrial Wastewater Land Application Systems, Ecology Publication # 93-36. 20 pp.

Washington State Department of Ecology.

Laws and Regulations(<http://www.ecy.wa.gov/laws-rules/index.html>)

Permit and Wastewater Related Information
(<http://www.ecy.wa.gov/programs/wq/wastewater/index.html>)

Washington State Department of Ecology, 2005. Implementation Guidance for the Ground Water Quality Standards, Ecology Publication # 96-02. Revised October.

Washington State Department of Ecology, 2007. Focus Sheet on Solid Waste Control Plan, Developing a Solid Waste Control Plan for Industrial Wastewater Discharge Permittees. February. Ecology publication # 07-10-024.

APPENDICES

APPENDIX A - PUBLIC INVOLVEMENT INFORMATION

Ecology proposes to reissue a permit to Columbia Ethanol Holdings, LLC. The permit prescribes operating conditions and wastewater discharge limits. This fact sheet describes the facility and Ecology's reasons for requiring permit conditions.

Ecology placed a Public Notice on February 6, 2009 in Tri City Herald to inform the public and to invite comment on the proposed reissuance of this State Waste Discharge permit as drafted.

The Notice -

- Tells where copies of the draft Permit and Fact Sheet are available for public evaluation (a local public library, the closest Regional or Field Office, posted on our website.)
- Offers to provide the documents in an alternate format to accommodate special needs.
- Asks people to tell us how well the proposed permit would protect the ground water.
- Invites people to suggest fairer conditions, limits, and requirements for the permit.
- Invites comments on Ecology's determination of compliance with antidegradation rules.
- Urges people to submit their comments, in writing, before the end of the comment period
- Tells how to request a public hearing about the proposed State Waste Discharge Permit.
- Explains the next step(s) in the permitting process.

[attach printed copy of the Public Notice mail-out] Ecology has published a document entitled **Frequently Asked Questions about Effective Public Commenting** which is available on our website at <http://www.ecy.wa.gov/biblio/0307023.html>.

You may obtain further information from Ecology by telephone, (360) 407-6064, by writing to the permit writer at the address listed below.

Ha Tran
Industrial Section
PO Box 47706
Olympia, WA 98504-7600

The primary author of this permit and fact sheet is Don Nelson.

APPENDIX B - GLOSSARY

AKART – The acronym for “all known, available, and reasonable methods of prevention, control and treatment.” AKART is a technology-based approach to limiting pollutants from wastewater discharges which requires an engineering judgment and an economic judgment. AKART must be applied to all wastes and contaminants prior to entry into waters of the state in accordance with RCW 90.48.010 and 520, Chapters 173-200-030(2)(c)(ii) and 173-216-110(1)(a) WAC.

Alternate Point of Compliance – An alternative location in the ground water from the point of compliance where compliance with the ground water standards is measured. It may be established in the ground water at locations some distance from the discharge source, up to, but not exceeding the property boundary and is determined on a site specific basis following an AKART analysis. An “early warning value” must be used when an alternate point is established. An alternate point of compliance must be determined and approved in accordance with Chapter 173-200-060(2) WAC.

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Annual Average Design Flow (AADF)—The average of the daily flow volumes anticipated to occur over a calendar year.

Average Monthly Discharge Limit--The average of the measured values obtained over a calendar month's time.

Background water quality – The concentrations of chemical, physical, biological or radiological constituents or other characteristics in or of ground water at a particular point in time upgradient of an activity that has not been affected by that activity, [Chapter 173-200-020(3) WAC]. Background water quality for any parameter is statistically defined as the 95% upper tolerance interval with a 95% confidence based on at least eight hydraulically upgradient water quality samples. The eight samples are collected over a period of at least one year, with no more than one sample collected during any month in a single calendar year.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD₅--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD₅ is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of the collection or treatment facility.

Categorical Pretreatment Standards—National pretreatment standards specifying quantities or concentrations of pollutants or pollutant properties which may be discharged to a POTW by existing or new industrial users in specific industrial subcategories.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling—A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations. In addition it includes as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Ecology may conduct additional sampling.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring --Uninterrupted, unless otherwise noted in the permit.

Distribution Uniformity--The uniformity of infiltration (or application in the case of sprinkle or trickle irrigation) throughout the field expressed as a percent relating to the average depth infiltrated in the lowest one-quarter of the area to the average depth of water infiltrated.

Early Warning Value – The concentration of a pollutant set in accordance with Chapter 173-200-070 WAC that is a percentage of an enforcement limit. It may be established in the effluent, ground water, surface water, the vadose zone or within the treatment process. This value acts as a trigger to detect and respond to increasing contaminant concentrations prior to the degradation of a beneficial use.

Enforcement limit – The concentration assigned to a contaminant in the ground water at the point of compliance for the purpose of regulation, [Chapter 173-200-020(11) WAC]. This limit assures that a ground water criterion will not be exceeded and that background water quality will be protected.

Engineering Report--A document, signed by a professional licensed engineer, which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in Chapter 173-240-060 WAC or Chapter 173-240-130 WAC.

Ground water – Water in a saturated zone or stratum beneath the surface of land or below a surface water body.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial User—A discharger of wastewater to the sanitary sewer which is not sanitary wastewater or is not equivalent to sanitary wastewater in character.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Interference— A discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

- Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
- Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), sludge regulations appearing in 40 CFR Part 507, the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Local Limits—Specific prohibitions or limits on pollutants or pollutant parameters developed by a POTW.

Maximum Daily Discharge Limit--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Maximum Day Design Flow (MDDF)—The largest volume of flow anticipated to occur during a one-day period, expressed as a daily average.

Maximum Month Design Flow (MMDF)— The largest volume of flow anticipated to occur during a continuous 30-day period, expressed as a daily average.

Maximum Week Design Flow (MWDF)— The largest volume of flow anticipated to occur during a continuous 7-day period, expressed as a daily average.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

pH--The pH of a liquid measures its acidity or alkalinity. It is the negative logarithm of the hydrogen ion concentration. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Pass-through— A discharge which exits the POTW into waters of the-State in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation), or which is a cause of a violation of State water quality standards.

Peak Hour Design Flow (PHDF)—The largest volume of flow anticipated to occur during a one-hour period, expressed as a daily or hourly average.

Peak Instantaneous Design Flow (PIDF)—The maximum anticipated instantaneous flow.

Point of Compliance – The location in the ground water where the enforcement limit shall not be exceeded and a facility must be in compliance with the Ground Water Quality Standards. It is determined on a site specific basis and approved or designated by Ecology. It should be located in the ground water as near and directly downgradient from the pollutant source as technically, hydrogeologically, and geographically feasible, unless an alternative point of compliance is approved.

Potential Significant Industrial User--A potential significant industrial user is defined as an Industrial User which does not meet the criteria for a Significant Industrial User, but which discharges wastewater meeting one or more of the following criteria:

- a. Exceeds 0.5 % of treatment plant design capacity criteria and discharges <25,000 gallons per day or;
- b. Is a member of a group of similar industrial users which, taken together, have the potential to cause pass through or interference at the POTW (e.g. facilities which develop photographic film or paper, and car washes).

Ecology may determine that a discharger initially classified as a potential significant industrial user should be managed as a significant industrial user.

Quantitation Level (QL)--A calculated value five times the MDL (method detection level).

Reasonable Potential — A reasonable potential to cause a water quality violation, or loss of sensitive and/or important habitat.

Significant Industrial User (SIU)--

1) All industrial users subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N and;

2) Any other industrial user that: discharges an average of 25,000 gallons per day or more of process wastewater to the POTW (excluding sanitary, noncontact cooling, and boiler blow-down wastewater); contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority* on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

Upon finding that the industrial user meeting the criteria in paragraph 2, above, has no reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement, the Control Authority* may at any time, on its own initiative or in response to a petition received from an industrial user or POTW, and in accordance with 40 CFR 403.8(f)(6), determine that such industrial user is not a significant industrial user.

*The term "Control Authority" refers to the Washington State Department of Ecology in the case of non-delegated POTWs or to the POTW in the case of delegated POTWs.

Slug Discharge—Any discharge of a non-routine, episodic nature, including but not limited to an accidental spill or a non-customary batch discharge to the POTW. This may include any pollutant released at a flow rate which may cause interference with the POTW.

Soil Scientist--An individual who is registered as a Certified or Registered Professional Soil Scientist or as a Certified Professional Soil Specialist by the American Registry of Certified Professionals in Agronomy, Crops, and Soils or by the National Society of Consulting Scientists or who has the credentials for membership. Minimum requirements for eligibility are: possession of a baccalaureate, masters, or doctorate degree from a U.S. or Canadian institution with a minimum of 30 semester hours or 45 quarter hours professional core courses in agronomy, crops or soils, and have 5,3,or 1 years, respectively, of professional experience working in the area of agronomy, crops, or soils.

Solid waste -- All putrescible and non-putrescible solid and semisolid wastes including, but not limited to, garbage, rubbish, ashes, industrial wastes, swill, sewage sludge,

demolition and construction wastes, abandoned vehicles or parts thereof, contaminated soils and contaminated dredged material, and recyclable materials.

Soluble BOD₅ – Determining the soluble fraction of Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of soluble organic material present in an effluent that is utilized by bacteria. Although the soluble BOD test is not specifically described in Standard Methods, filtering the raw sample through at least a 1.2 um filter prior to running the standard BOD₅ test is sufficient to remove the particulate organic fraction.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Coliform Bacteria--A microbiological test which detects and enumerates the total coliform group of bacteria in water samples.

Total Dissolved Solids--That portion of total solids in water or wastewater that passes through a specific filter.

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Water Quality-based Effluent Limit--A limit on the concentration of an effluent parameter that is intended to prevent pollution of the receiving water.

APPENDIX C – TECHNICAL CALCULATIONS

Figure 1. Topography of the Proposed Finley Site.

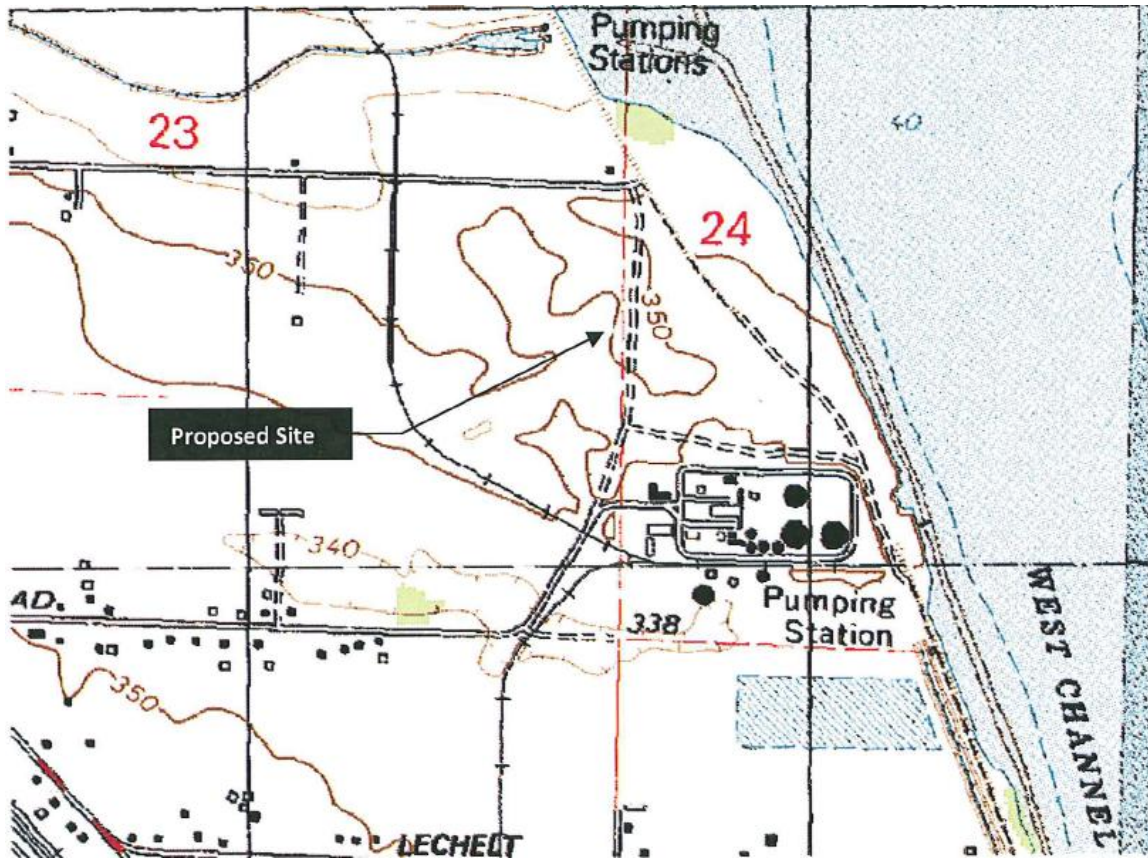


Figure 2a. Soil Survey Map of Finley Site.

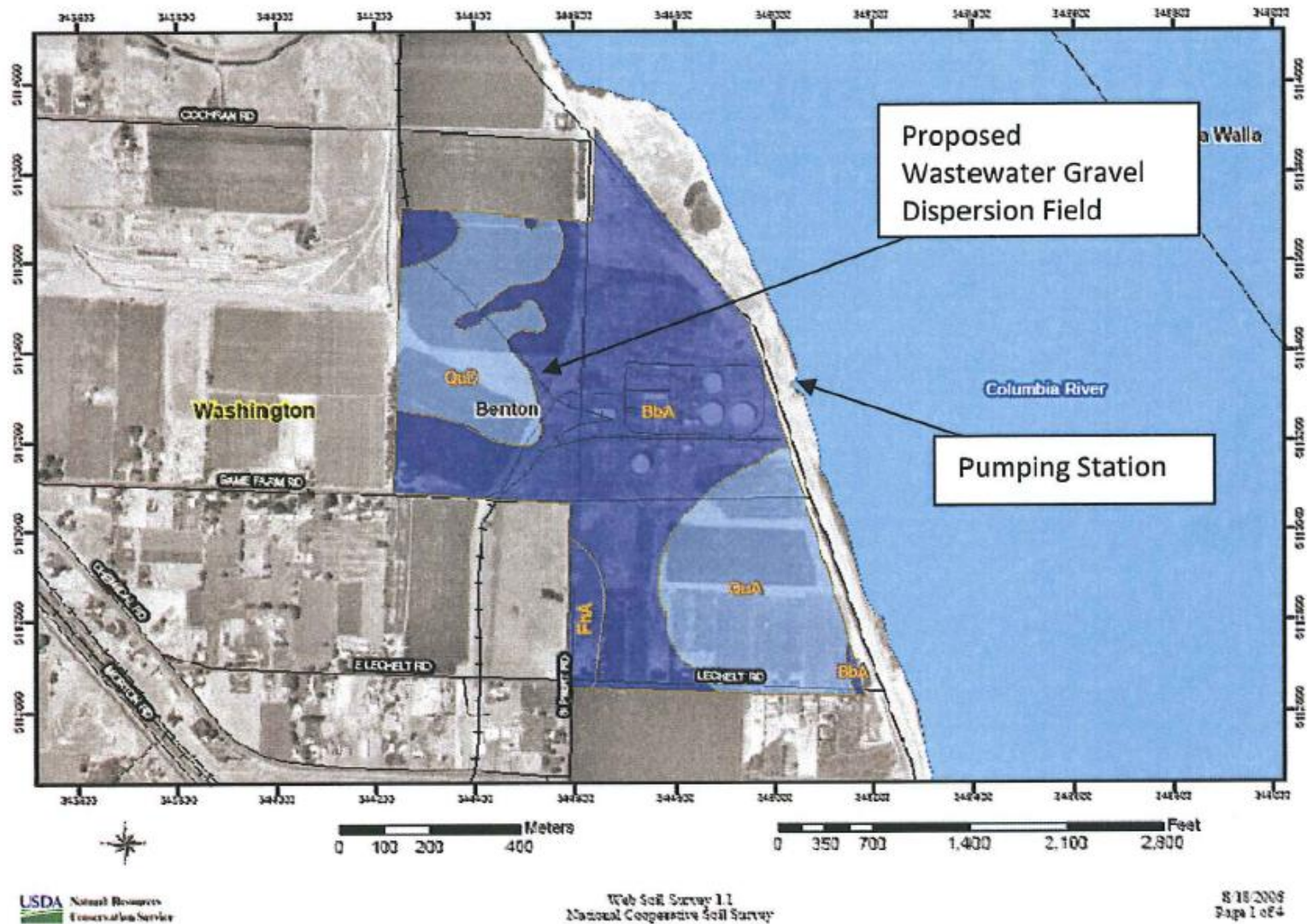
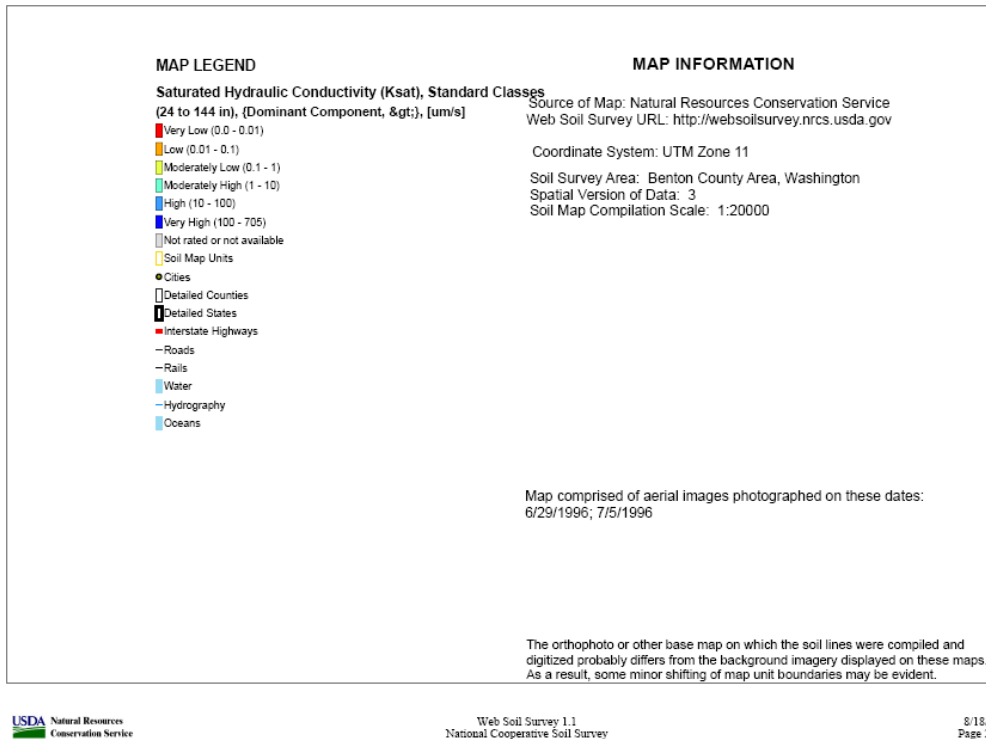


Figure 2b. Legend for Soil Survey MapSATURATED HYDRAULIC CONDUCTIVITY (Ksat), STANDARD CLASSES RATING FOR BENTON COUNTY AREA,
WASHINGTON**Figure 2c. Soils Survey Map Soils Description****Tables - Saturated Hydraulic Conductivity (Ksat), Standard Classes**

Summary by Map Unit - Benton County Area, Washington

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating (micrometers per second)	Total Acres in AOI	Percent of AOI
BbA	Burbank loamy fine sand, 0 to 2 percent slopes	265.7143	110.5	58.3
FnA	Finley fine sandy loam, moderately deep, 0 to 2 percent slopes	270.1099	5.2	2.8
QuA	Quincy loamy sand, 0 to 2 percent slopes	92.0000	41.8	22.1
QuD	Quincy loamy sand, 2 to 15 percent slopes	92.0000	31.9	16.8

Figure 3. Groundwater Flow Directions.

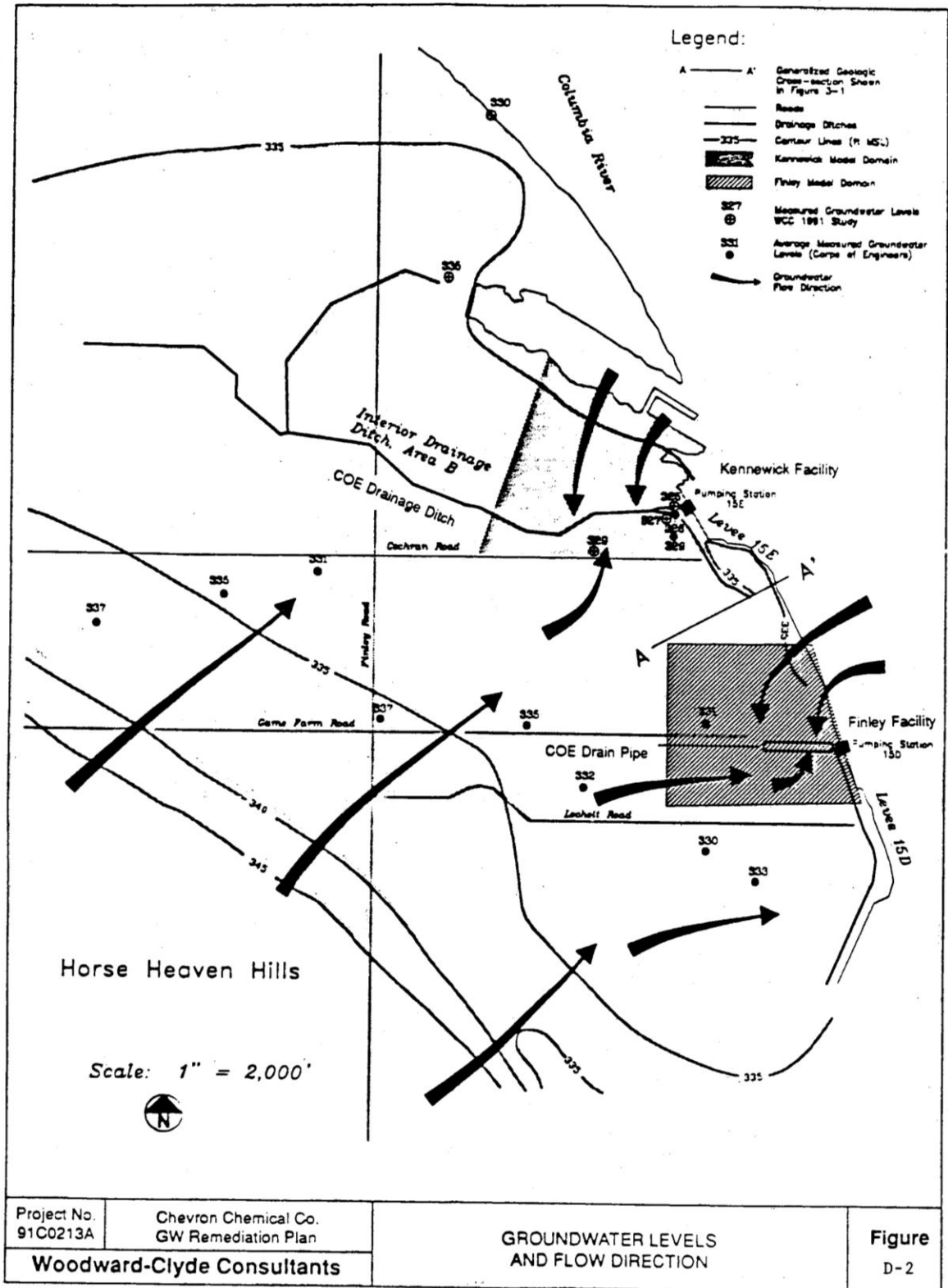
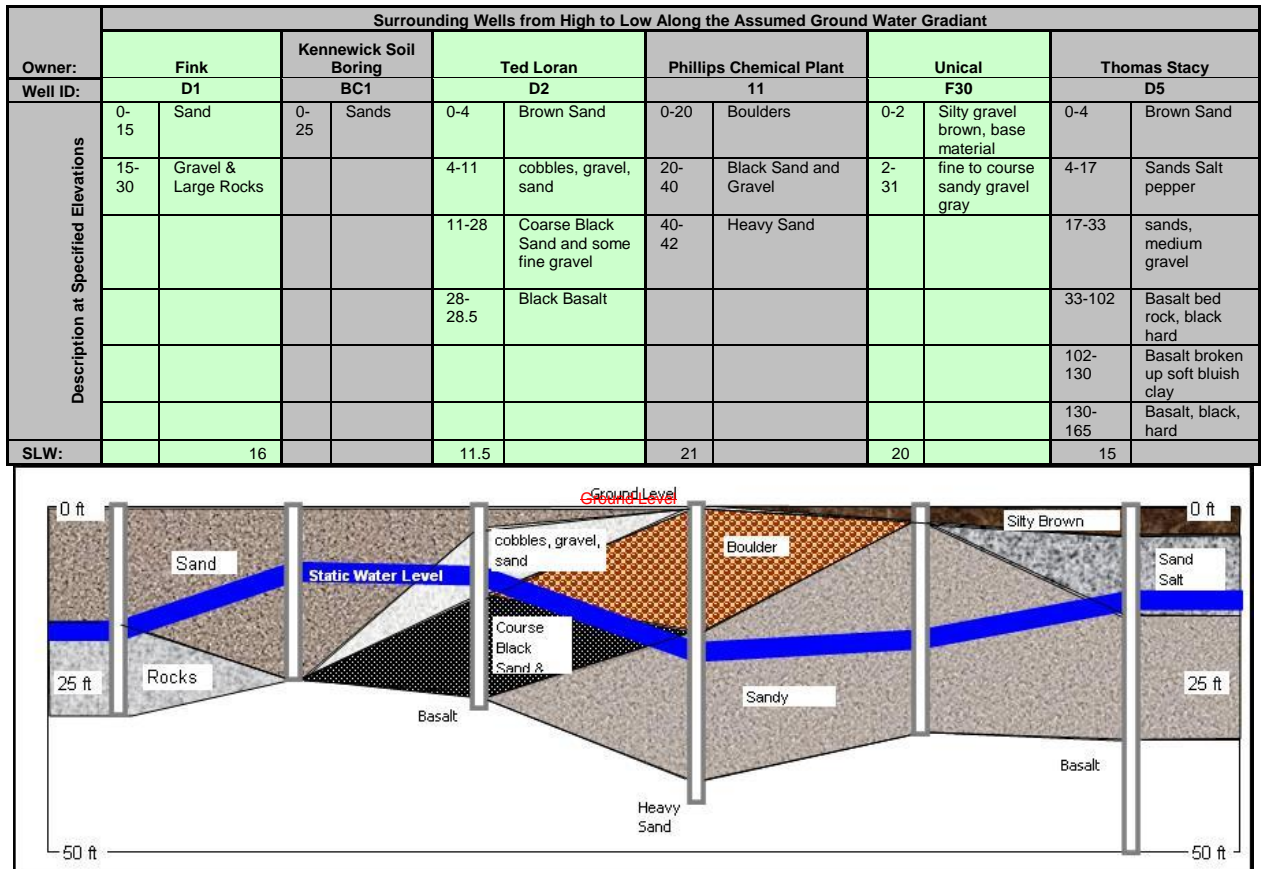


Figure 4. Wells in Surrounding Area of the Proposed Site.



Figure 5. Finley Site Fence Diagram.



FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST-9259
FACILITY NAME: Columbia Ethanol Plant Holdings, LLC

Figure 6. Monitoring Wells on the Agrium US, Inc. Site.

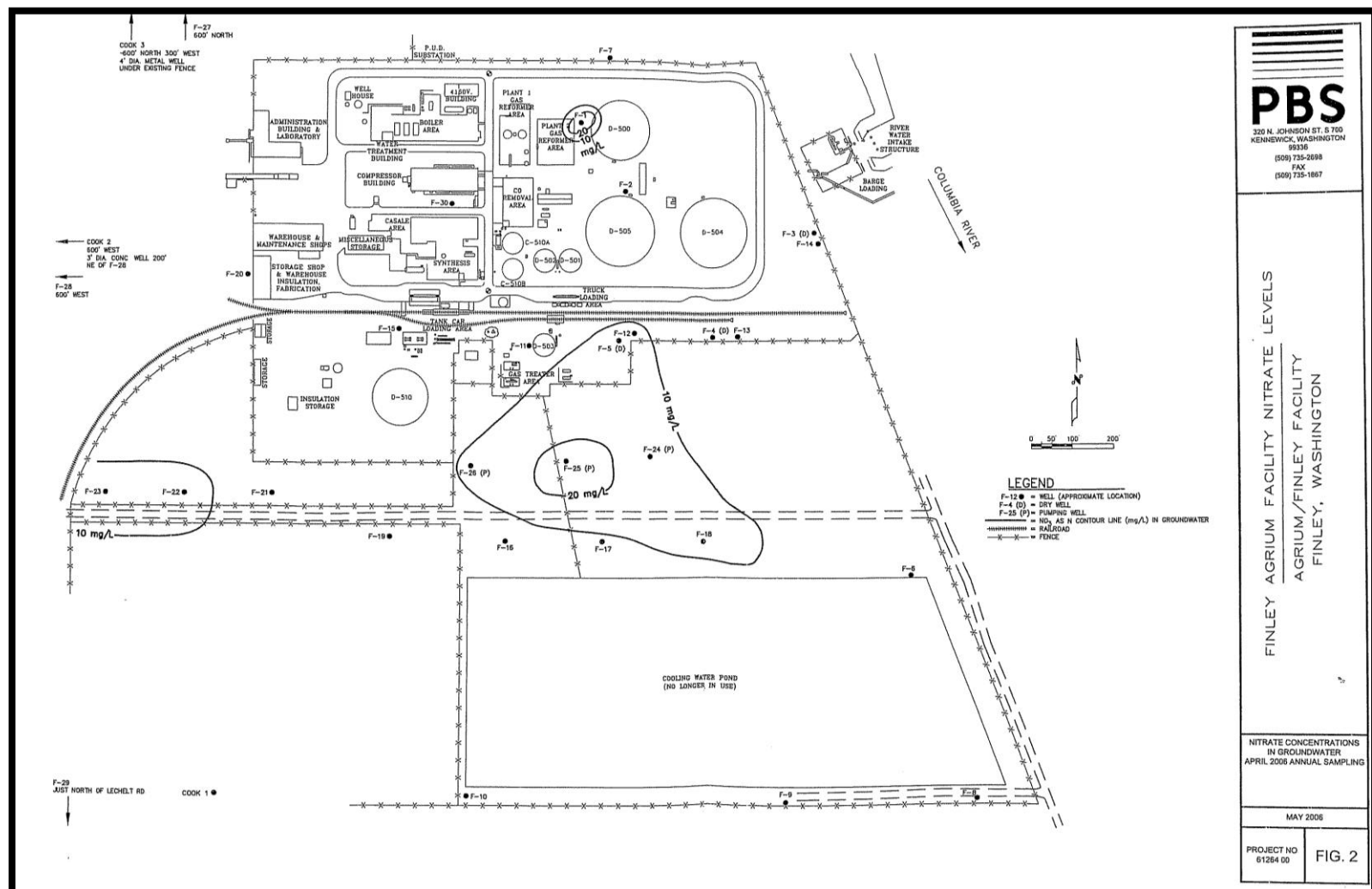


Figure 7. Ethanol Facility Water Flowsheet – Maximum Water Requirements.

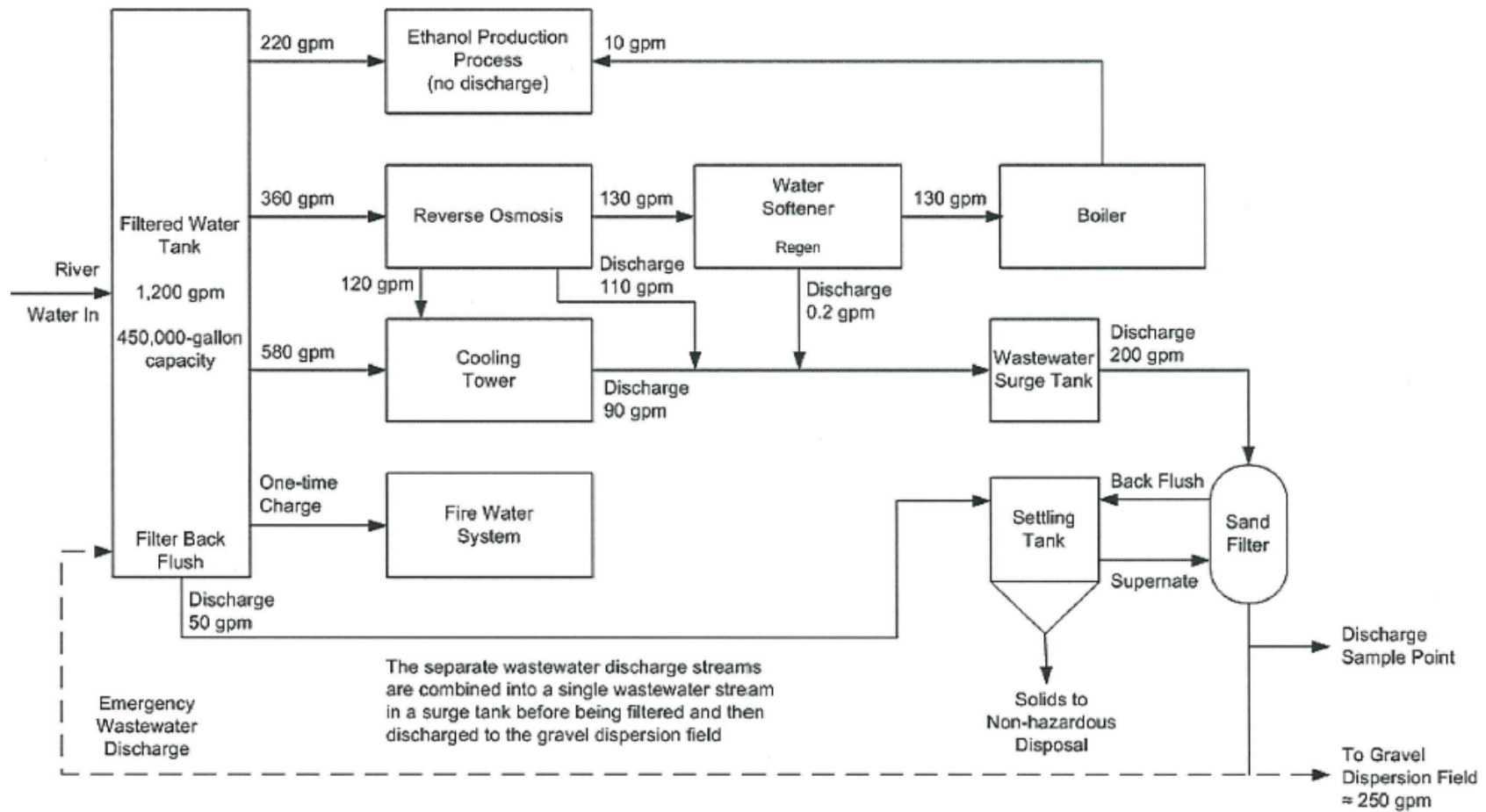


Table 3. On-Site Well Water Sample Analysis.

Analysis	Units	Result	Sample*
pH	units	7.1	1
Conductivity	µmhos/cm	203	1
Chloride	mg/L	ND (<5)	1
Fluoride	mg/L	ND (0.2)	1
Nitrate (NO ₃)	mg/L	1.5	1
Nitrite (NO ₂)	mg/L	ND (<0.05)	1
Sulfur (SO ₄)	mg/L	ND	1
Hardness (CaCO ₃)	mg/L	83	1
Arsenic	mg/L	ND (<0.001)	1
Barium	mg/L	ND (<0.1)	1
Beryllium	mg/L	ND (<0.003)	1
Cadmium	mg/L	ND (<0.001)	1
Chromium	mg/L	ND (<0.01)	1
Copper	mg/L	0.573	1
Iron	mg/L	ND (<0.1)	1
Lead	mg/L	0.009	1
Manganese	mg/L	ND (<0.01)	1
Mercury	mg/L	ND (<0.0005)	1
Nickel	mg/L	ND (<0.02)	1
Selenium	mg/L	ND (<0.005)	1
Silver	mg/L	ND (<0.01)	1
Sodium	mg/L	ND (<5)	1
Thallium	mg/L	ND (<0.001)	1
Zinc	mg/L	ND (<0.2)	1

*Sample:

Agrium U.S. Inc., Kennewick Fertilizer Operations, Washington, Sample Number: KA 126908, Sample Date: 02/25/2005, Well Monitoring Analysis.

ND = not detected; below limit indicated in parentheses.

Table 4. Wells Nearest Proposed Site.

Map ID	Owner	Well Log ID	Well Tag No.	Use	Well Depth (feet)	Groundwater Level (feet)
Agrium's Finley Plant On-Site Wells – Within approx 0.25 miles of Proposed Finley Site						
F-30	Unocal	147725	ABT-785	Test Well – No Pump	31	20
11	Phillips Chemical	296759	—	Test Well – No Pump	42	21
BC-1	Benton County	302224	—	Soil Bore Hole	25	—
D1	I. J. & Cordelia V. Fink	140881	—	Domestic	30	—
D2	Ted Loran	145720	—	Domestic	27	11.5
D3	THOMAS STACY	145830	—	Domestic	165	15
D4	Mr. & Mrs. Richard Kess	143486	—	Domestic	110	0.5

Table 5. Concentration of Water Treatment Chemicals in Wastewater.

Water Treatment Chemical ¹	Concentration in Ethanol Facility Wastewater (mg/L)
Sodium Bisulfite	2.0
2,2-Dibromo-3-nitrilopropionamide	0 ²
Polyethylene glycol mixture	1.9
Phosphonobutane Tricarboxylic Acid	2.5
Acrylate Polymer	0.7
Maleic Anhydride Terpolymer	0.5
Acrylate/Sulfonate Copolymer	3.6
1-Hydroxyethylidene-1,1-diphosphonic Acid	1.1
Sodium Hydroxide	3.9
Tolyltriazole	0.8
Nonyl Phenol Surfactant	0.1

¹ These chemicals provide the necessary water chemistry control function as biocides, descalers, and corrosion inhibitors in the reverse osmosis system and the cooling towers.

² 2,2-Dibromo-3-nitrilopropionamide is degraded in the cooling towers prior to discharge in accordance with the principles of AKART.

AKART = all known available and reasonable methods of prevention, control, and treatment.

**Table 6. Wastewater Compliance with Ground Water
Quality Standards. (2 Sheets)**

Chapter 173-200 WAC Groundwater Quality Criteria			Estimated Ethanol Facility Wastewater Value	Wastewater Compliance with Chapter 173-200 WAC
Contaminants	Limiting Value	Units		
I. PRIMARY AND SECONDARY CONTAMINANTS AND RADIONUCLIDES				
A. Primary Contaminants				
Barium	1.0	mg/L	0.126	Compliant
Cadmium	0.01	mg/L	0.00076	Compliant
Chromium	0.05	mg/L	0.0020	Compliant
Lead	0.05	mg/L	0.0010	Compliant
Mercury	0.002	mg/L	0.00050	Compliant
Selenium	0.01	mg/L	0.0019	Compliant
Silver	0.05	mg/L	0.0018	Compliant
Fluoride	4	mg/L	0.419	Compliant
Nitrate (as N)	10	mg/L	5.8	Compliant
Endrin	0.0002	mg/L	Not analyzed	¹
Methoxychlor	0.1	mg/L	Not analyzed	¹
1,1,1-Trichloroethane	0.20	mg/L	Not analyzed	¹
2-4 D	0.10	mg/L	Not analyzed	¹
2,4,5 –TP Silvex	0.01	mg/L	Not analyzed	¹
Total Coliform Bacteria	1/100	mL	Not analyzed	²
B. Secondary Contaminants				
Copper	1.0	mg/L	0.21	Compliant
Iron	0.30	mg/L	0.266	Compliant
Manganese	0.05	mg/L	0.036	Compliant
Zinc	5.0	mg/L	0.042	Compliant
Chloride	250	mg/L	10.8	Compliant
Sulfate	250	mg/L	64.9	Compliant
Total dissolved solids	500	mg/L	413.2	Compliant
Foaming agents	0.5	mg/L	Not analyzed	¹
pH	6.5 – 8.5		6.8	Compliant
Corrosivity	Noncorrosive		Noncorrosive	Compliant
Color	15	Color Units	Not analyzed	³
Odor	3	Threshold odor units	Not analyzed	³
C. Radionuclides			Not analyzed	¹

**Table 6. Wastewater Compliance with Ground Water
Quality Standards. (2 Sheets)**

Chapter 173-200 WAC Groundwater Quality Criteria			Estimated Ethanol Facility Wastewater Value	Wastewater Compliance with Chapter 173-200 WAC
Contaminants	Limiting Value	Units		
II. CARCINOGENS				
Arsenic	0.05	µg/L	Non Detect (<1.0µg/l)	Compliant ⁴
Other carcinogens			Not analyzed	¹

¹This chemical is neither used nor produced at the ethanol facility and would be present in the wastewater only if present in the Columbia River feed water. Analysis for this chemical was not performed because this chemical is not known or expected to be a concern in Columbia River water.

²Even if present in the Columbia River feed water, coliform bacteria is not expected to be present in the wastewater because the water is treated to control bacterial growth in the reverse osmosis system and cooling towers.

³Color and odor were not analyzed, but process history at other ethanol facilities of the same design as the Columbia Ethanol Plant Holdings ethanol plant has shown that wastewater is clear and odorless.

⁴The wastewater is compliant with the anti-degradation policy of Chapter 173-200-030 WAC. Arsenic is neither used nor produced at the ethanol facility and is present in the wastewater because of its presence in the Columbia River water. Analysis for arsenic was performed because arsenic is known and expected to be in concentrations of concern in the surface and groundwaters of Washington State. Analysis of the Columbia River water shows arsenic present at a level of 1.6 µg/L, which exceeds the Chapter 173-200 WAC groundwater quality criteria of 0.05 µg/L. Analysis of the groundwater from the on-site well shows arsenic present at a Non-Detect level of <1.0µg/L. The arsenic levels in the wastewater will be controlled to be less than detectable, (<1.0µg/L), thus complying with the anti-degradation policy of Chapter 173-200-030 WAC.

APPENDIX D - RESPONSE TO COMMENTS

Ecology published the public notice for issuance of Columbia Ethanol proposed State Waste Discharge Permit on February 6, 2009 with a closing date of March 9, 2009. Ecology received one comment letter dated February 6, 2009 from Ray Lam of Silk Road Environmental.

Ecology completed its review of the comments and provided the responses below. Ecology will send a copy of this document in its entirety to commenter of the draft documents.

Comments from Ray Lam, Silk Road Environmental (1-5)

- 1. Mr. Lam submitted comments on the previous permit regarding air permitting. He commented that several pollutants seemed to be slightly under New Source Review (NSR) and Prevention of Significant Deterioration (PSD) limits, which appeared to be a synthetic minor. He wished to know if proposed production increase has associated air pollutants increases.**

Ecology evaluated the impact of production increase on air emissions in the SEPA Checklist Modification review. We require the facility to submit a Notice of Construction to the Benton Clean Air Authority (BCCA) at least 90 days prior to construction commissioning. The Notice of Construction application will contain air emissions data associated with the production increase. Please contact the BCCA for air emission data.

- 2. Mr. Lam requested to see the list of oil/greases, Dangerous Wastes (DW) and Extremely Hazardous Waste (EHW), as required in permit condition S9.**

Permit condition S9 requires the facility to submit the Spill Plan containing the list of all oil and petroleum products and other materials used and/or stored on site, which when spilled, would designate as DW or EHW. Ecology requires the permittee to submit the Spill Plan, including the list, 180 days after plant startup. The plant has not start up at this time. The requested list is not currently available. Please check back with Ecology at a later date.

- 3. Mr. Lam requested to see the previous effluent characterization report described in Appendix A.**

Effluent characterization report is not currently available. The plant construction is not complete and the facility has not discharge or sample the effluent. The first effluent characterization report is due at the next permit renewal application. Please check back with Ecology at a later date.

- 4. Where does the arsenic come from? Why is the effluent characterization detection limit for arsenic 10 times higher than the actual permit limit?**

The facility does not use or produce arsenic. The source of arsenic is the Columbia River water, which the plant will use as cooling water. Sampling shows that the arsenic level in the

river is 1.6 ug/L. The facility will use iron absorption and sand filter to treat arsenic in the cooling water before discharge.

To determine detection limits, Ecology consulted EPA and Manchester Laboratory and surveyed contract labs and permittee labs. The best present detection limit (DL) and quantitation limit (QL) are 0.1 and 0.5 µg/L, respectively. The DL and QL are higher than the permit limit, which is based on arsenic groundwater quality criteria of 0.05 µg/L. It is not possible for the laboratories detect the presence of arsenic at the permit limit concentrations. Ecology considered the facility in compliance with the limit if the effluent is non-detect with the detection limit of 0.5 µg/L.

5. Mr. Lam requested to see a copy of Spill Plan. He asked if spills can enter the groundwater.

Ecology requires the facility to submit the Spill Plan 180 after startup. The plant has not startup at this time. The Spill Plan is not currently available. Please see response to comment #2.

Storage and handling systems must provide appropriate control measures to prevent spills from entering the groundwater. Such controls include containment equipment and berms. The Spill Plan will have a description of spill prevention measures.